

East Parterre Gardens  
Investigation  
Witley Court



**Archaeological Excavation Interim**



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**Witley Court, Worcestershire****The *parterre de broderie* in the East Parterre: Interim report on excavation, recording and analysis, 2006****INTERIM ARCHAEOLOGICAL INVESTIGATIONS REPORT****CONTENTS**

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## Witley Court, Worcestershire

### *The parterre de broderie in the East Parterre: Recording and analysis*

#### INTERIM ARCHAEOLOGICAL INVESTIGATIONS REPORT

##### SUMMARY

*The gardens at Witley Court, a Scheduled Ancient Monument, were created by William A. Nesfield in 1854-60 for Lord Ward. These comprise two large gardens with parterres and fountains, constructed on the east and south sides of the house and church, designed to compliment the modernisation of the house by Samuel Daukes, and replacing the former open landscaping around the house according to a design by George Repton. In 1937 the house caught fire and was never rebuilt, and later in the century both the house and garden were stripped of some architectural details before coming into public ownership.*

*The ongoing programme of archaeological investigation within the East Parterre Garden, carried out by Oxford Archaeology (OA), is intended to inform the conservation and reinstatement of the gardens. This interim report has been prepared on completion of the 2006 season of work. It briefly summarizes the methods of topsoil stripping and preliminary rectified photography on the central bed, and focuses principally on presenting the results of sample excavation and recording on the north and south side beds. The immediate purpose of the report is to inform planning and preparation of the beds for planting.*

*The level of archaeological preservation found in the side bed was unexpectedly good. However, the original layout of the planting beds proved difficult to reconstruct from rectified photography alone, and required extensive sample excavation. Rectified aerial photography using mast-mounted cameras was carried out in two passes, in September and November 2006. Further detailed excavation and recording work on the central bed has been deferred pending funding decisions.*

*Both the side beds and the central bed have been temporarily covered with two layers of geotextile membrane. In addition, the excavated planting beds have been back-filled with wood chips, laid in between the geotextile layers. The remaining box hedge plants in the central bed have been removed by cutting at ground level (cuttings have been taken from suitable plants to assist in reconstruction of the gardens).*



## Witley Court, Worcestershire

### *The parterre de broderie in the East Parterre: Recording and analysis*

#### ARCHAEOLOGICAL INVESTIGATIONS INTERIM REPORT

## 1 INTRODUCTION

### 1.1 Location and scope of work

- 1.1.1 Oxford Archaeology (OA) has been retained by English Heritage (EH) West Midlands Region, to undertake a programme of archaeological recording in the Parterre Gardens at Witley Court Scheduled Ancient Monument, Great Witley, Worcestershire (Malvern Hills District, SAM 306, NGR SO 77055 64930) (Fig. 1).
- 1.1.2 The Parterre Garden Project Design was developed as an application to the Heritage Lottery Fund (HLF), and comprises a Conservation Plan and an SMCC(6) application in addition to other technical reports and designs.
- 1.1.3 The ongoing programme of archaeological investigation within the East Parterre Gardens, carried out by Oxford Archaeology (OA), is intended to inform the conservation and reinstatement of the gardens. This interim report has been prepared on completion of the 2006 season of work. It briefly summarizes the methods of topsoil stripping and preliminary rectified photography on the central bed, and focusses principally on presenting the results of sample excavation and recording on the north and south side beds. The immediate purpose of the report is to inform future planning and preparation of the north and south beds for planting.
- 1.1.4 The level of archaeological preservation found in the side bed was unexpectedly good. However, the original layout of the planting beds proved difficult to reconstruct from rectified photography alone, and required extensive sample excavation. Additions to the scheme of investigation included excavation of sample sections through the north and south side beds. These were designed to record the construction sequence of each bed and details of the pattern not apparent from cleaning and rectified photography. Hand-drawn plans were prepared to supplement the photogrammetric record.
- 1.1.5 Planned detailed excavation and recording work on the central bed will take place in 2007.
- 1.1.6 The scope of works undertaken and reported in this document were developed with the assistance and advice of the EH Inspector, Tony Fleming.

## 1.2 Geology and topography

1.2.1 Witley Court lies near the village of Great Witley Worcestershire and west of the important river port of Stourport. The site lies on a sandstone scarp at c. 85 m OD. The land is presently kept under a basic landscape management policy with the site being open as a public attraction through the Guardianship of English Heritage. The surrounding area is open farmland and woodland.

## 1.3 Archaeological and historical background

1.3.1 The archaeological and historical background of the house and its surrounding gardens has been the subject of a number of previous archaeological, documentary, cartographic and pictorial assessments and is not repeated here (Nottingham University n.d., c1997; Hughes 1997; Callf 1998; Davies and Weaver 2004).

1.3.2 The East Parterre gardens have been the subject of previous archaeological investigations. In 1996 the City of Hereford Archaeology Unit undertook a programme of architectural recording and archaeological surveying of the house and its surroundings (CHAU 1994 and 1996). These works included a landscape survey of the grounds to the south of the house. Invasive archaeological investigations within the gardens were carried out by Nottingham University between 1996-7. These works included the excavation of trenches within the south, east and north parterre gardens, the redefinition of the Ha-Ha that surrounds the gardens balustrade and the partial excavation of the main bed of the east parterre (Heald and McGee 1996 and 1997). The excavations undertaken within the main bed of the east parterre revealed significant evidence for the survival of its original design.

## 1.4 Acknowledgements

1.4.1 Thanks to all the staff at Witley Court for their help during the archaeological works and to Tony Fleming (English Heritage Inspector, West Midlands Region) Peter Barrett (English Heritage Project Manager). The garden staff at Witley Court have very kindly provided materials, advice and much practical assistance. Rectified photography was undertaken by Aerial Close-up Limited. Geophysical survey was undertaken by Engineering Archaeological Services Limited.

## 2 FIELDWORK AIMS

2.1.1 As detailed investigation of the central parterre has not yet to be completed, and detailed post-excavation analysis has not been undertaken, most of the project objectives have yet to be completed. The objectives of the archaeological programme, as detailed in the English Heritage brief, are listed below. Objectives highlighted in red have been partially addressed at this stage, generally in relation to the side beds only:

1. The project managers should thoroughly familiarise themselves with the site and with existing reports in particular those described above: Nottingham University n.d., c.1997; Hughes 1997; Callf 1998 and Davies and Weaver 2004. The archaeological team should
2. assess the records and plans from the 1996 excavations of the evidence for the construction of the parterre, the layout of the box hedging and the areas and pattern of coloured materials and mown grass areas and to assimilate the evidence with the present project's design
3. assess current geophysical potential in discussion with English Heritage Geophysicists and to survey scoped areas in advance
4. assess previous topographical and hachured survey record of the east parterre [Davies & Weaver 2004] and enhance detail to ensure the complete record and characterisation of the profiles and sloping areas of lawn around the parterre de broderie and the side beds. Enhance previous sections E-W and N-S across the parterre incorporating information from Oxford Archaeology excavations in 2006 which revealed terracing into the bedrock.
5. survey and record the locations and character of the stems of the surviving box plants, sample and record plant material in accordance with objective 6. To assess the potential for applied archaeological science and to prepare a proposal in discussion with Ms Lisa Moffett the Regional Science Advisor. Questions include, identification of decorative materials and their sources, whether useful pedological, chemical, or dendrochronological / botanical evidence may be obtained. The later, to throw light on the age of the box bushes and their management since abandonment of the gardens in 1938.
6. identify, define and record in full the archaeological evidence, whether surviving as cut features or soil marks or otherwise, of the garden construction, box hedge layout and design, and the detail of design motifs, their form and construction and any evidence of modification in the whole areas of the parterre de broderie and in the side beds.
7. identify, define and record structural remains of the urns' foundations in the side beds and any similar evidence for the setting of urns within the lawn areas as they appear in the photographic record.
8. record the locations and obtain 100% recovery of coloured stones and terracotta forming the permanently coloured elements of Nesfield's design

- and the evidence for the appearance of the design. To identify evidence for changes in the use/type of materials in any areas within the pattern.
9. provide overall archaeological observation and record of ground disturbance during works in the garden, specifically, in association with the repair to the lowest course of the ballroom steps and to integrate the records with previous recording work.
  10. analyse and interpret the records, integrating those of the 1996 work and other relevant records, to provide a clear chronological narrative incorporating description, analysis and interpretation to include a sequence of spatially comprehensive plans and complementary metrically correct photography at a unified scale of the scoped areas showing the development of the layout, construction, design and use of box hedges, areas of decorative materials and lawn.
  11. prepare and provide a master plan of the record and interpretation of the design in CAD format, and as paper output, to inform the reinstatement on the ground of the evidence of Nesfield's designs of the parterre de broderie and the side beds.
  12. propose a method statement: for maintaining the essential protection of the excavated remains from damage during all site works; for the installation of a protective / monitoring layer; and for backfilling.
  13. provide an assessment of the archaeological records accrued from the Nesfield gardens and to propose a post-excavation research design and publication plan.
  14. provide a specification for the management of the archive of documentation from this project, its indexing for ease of retrieval and its curation, taking into account IFA and English Heritage standards and requirements.

### 3 FIELDWORK METHODOLOGY

#### 3.1 Geophysics methods

3.1.1 Fluxgate Gradiometry and Resistivity surveys were undertaken prior to the start of excavation work. The results of the survey are reported separately. The results are not helpful in reconstructing the layout of the beds and are not repeated here (Engineering Archaeological Services Limited, August 2006) .

#### 3.2 Topsoil stripping

3.2.1 The work on the central parterre comprised de-turfing the previously excavated east end of the entire bed and initial cleaning of the previously unexcavated west end. Some of the box plants were removed at that stage, others when the site was later covered with geotextile.

#### 3.3 Rectified photography methods

3.3.1 Rectified photography was carried out in two passes by a specialist photographic company 'Aerial Close-up Limited' using mast-mounted photographic equipment. The first pass was undertaken using analogue photographic methods in September 2006, after cleaning of the side beds. The second pass was carried out using high resolution digital methods in November 2006, following excavation of the sample sections. The photographs were rectified in AutoCAD 2004 by the OA Geomatics Department.

#### 3.4 Detailed excavation and recording methods

3.4.1 The side beds were first carefully cleaned for the purpose of the rectified photography. A change in the intended method was then implemented because of the difficulty in defining the bed features using photographic methods and surface inspection alone. A series of three transverse sample sections and one longitudinal section were excavated in the western half of each side bed, to locate and record bed cuts and paths in profile. Standard archaeological single context recording methods were applied, and a detailed hand-drawn site plans and sections were produced. The plans were then digitised and integrated with the photogrammetric record.

3.4.2 All areas of archaeological intervention (including trenches and test pits) were hand cleaned and recorded in section at a scale of 1:20 and in plan at a scale of 1:10. All areas of archaeological intervention were photographed using monochrome prints and colour transparencies following procedures laid down in the *OAU Fieldwork Manual* (ed. D. Wilkinson, 1992).

### 3.5 Temporary reinstatement method

3.5.1 The side beds and the central bed were temporarily covered with two layers of geotextile membrane, weighted down with planks. The excavated planting beds were back-filled with wood chips, laid in between the geotextile layers. The remaining box hedge plants in the central bed were removed by cutting at ground level (cuttings were taken from suitable plants to assist in reconstruction of the gardens).

### 3.6 Finds

3.6.1 Soil samples have been collected from recorded locations in the north and south side beds, to recover fill materials from the gravel paths, to determine their original colouring. Preliminary site observations are annotated on the drawings. Due to the unexpectedly good preservation there are relatively large quantities of coloured gravel fragments (white quartz, red brick/tile, black coal and blue slate). The original intention of collecting 100% of such material was therefore reduced to a sampling exercise.

3.6.2 No other finds have been collected.

### 3.7 Report and archive

3.7.1 These reports are both supported by an accompanying CD-ROM. The CD-ROM contains a digital copy of the report in PDF format, and digital data resulting from the project, including scans of conventional film images and digital images in TIFF format.

3.7.2 The report presents the interim results of the investigation works, following the sequence of the numbered objectives listed above. The current results under each heading are broken down by area where necessary.

3.7.3 Rectified photographic plans of the north and south side beds incorporated in this report are scaled down from original A1 drawings for illustrative purposes.



## 4 RESULTS: GENERAL

### 4.1 Soils and ground conditions

- 4.1.1 The site is located on sandstone bedrock that is generally overlain by a sequence of levelling deposits which form the sub-base for the garden's construction. The ground is artificially drained and conditions were generally good during the investigative works. The weather was predominantly fine and dry, but deteriorated somewhat towards the end of the season, becoming wetter during October and November.

## 5 RESULTS: SURVEY

### 5.1 Topographical Survey

- 5.1.1 Enhancement of existing topographical surveys has yet to be carried out. A detailed survey framework has been established for all three beds, for the purpose of rectified photography, and to link the photographic and drawn records.

### 5.2 Geophysical Survey

- 5.2.1 Only limited details of the parterre gardens could be determined from either the Fluxgate Gradiometer or resistivity surveys. The survey was not helpful in interpreting the garden features. The results are reported upon separately (Engineering Archaeological Services Limited, August 2006).

### 5.3 Rectified photography

- 5.3.1 Two rectified photography passes were carried out by Aerial Close-up. The first pass, using analogue photography, was undertaken in September 2006. The second pass, using digital photography, was completed in November 2006. In both cases the light conditions were variable, resulting in patchy colour matching, but the photographs provide an effective record of the overall bed design, albeit with difficulties in interpretation at a detailed level. The photographic records have been rectified and integrated with the detailed, hand-drawn site plans, in the form of a CAD drawing covering all three beds.

## 6 RESULTS: DETAILED EXCAVATION AND RECORDING

### 6.1 East Parterre central bed

6.1.1 During the 2006 season, topsoil was stripped from the entire central bed. Following two rectified photographic passes of the unexcavated western end, the remaining box hedge plants were removed by cutting at ground level (cuttings have been taken from suitable plants to assist in reconstruction of the garden planting scheme). Detailed excavation of the western half of the bed has been deferred until Spring 2007. The whole central bed has been temporarily covered with two protective layers of geotextile membrane. The previously excavated planting beds in the eastern half of the bed have been filled with a protective layer of wood chips, laid in between the geotextile layers.

### 6.2 East Parterre north and south beds

6.2.1 Detailed cleaning and excavation of sample sections of the north and south side beds has resulted in accurate drawn and photographic records of the design as originally implemented. These strongly suggest that the design of the north and south beds was intended to be identical in every respect. The following descriptions therefore apply equally to both beds. Minor discrepancies are noted where they occur, but invariably seem to result from flaws in execution, rather than deliberate design or modification. There are more flaws apparent in the north bed than in the south, which perhaps suggests that it was constructed first; i.e., lessons learned from the experience perhaps prevented similar mistakes in creation of the south bed.

6.2.2 There is no archaeological evidence that the basic design of the side beds was ever modified. However, the most obvious design features, the planting arrangements and decorative central urn, could have been replaced or modified repeatedly without leaving significant archaeological evidence. The paths of coloured gravel are less likely to have been modified and only four broad coloured gravels are recognisable: red brick/ tile, white quartz, occasional blue slate and black coal. The last of these is the most common inclusion, and may be a base layer rather than a design colour.

### 6.3 Overall description

6.3.1 The following text description uses interpreted measurements, ignoring discrepancies between the beds which are likely to result from errors in setting out or executing the design. More precise measurements are provided and discussed in Table 1.

6.3.2 The detail plans and section drawings (Figs. 2 to 10) are archaeological records which incorporate errors and discrepancies in execution of the design. Imperial and metric scales are provided.

- 6.3.3 The side beds each comprise a limestone-curbed rectangular plot (c 100 feet long and 21 feet wide) with curved chamfered corners at both ends (each chamfer is formed from a quarter circle with a radius of 6 feet). The centrepiece of each bed is an oval 'boss' (c 11 feet wide by 18 feet long), also surrounded by a limestone curb. The surface of the boss appears, on historic photographs, to have been lawned. In the centre of the boss was a raised brick pedestal, exactly 3 feet square, which photographs show supporting a large decorative urn.
- 6.3.4 The truncated remains of gravel paths were recorded running around the inside edge of the curb, and around the outer edge of the central oval boss. These would originally have been surfaced with different coloured gravels as part of the design, but survive only as coal-rich base layers with some remnant coloured materials (mainly white quartz and red brick/ tile fragments with some blue slate) mixed in.
- 6.3.5 The remainder of the side beds were planted with decorative borders forming a 'guilloche' pattern. The design comprised interlaced bands, c 24 in wide, consisting of two lines of box hedges (each c 4 in wide), separated by coloured gravel paths (c 16 in wide). The design formed a pattern of six interlaced loops (each c 12 feet in diameter). Three loops lay on either side of the central boss, the pattern being repeated, rather than mirrored, at each end of the bed. The centre of each loop was occupied by a flowerbed. Triangular areas filling the edge of the design do not appear clearly on historic photographs. There is no sign of planting in the available views so they are most likely to have been lawned. However, they may have had planting beds within them. At least one flowerpot base was found in one of the triangular beds during the investigation, although it is not clear whether it was *in situ*.
- 6.3.6 Estimated original dimensions of the various side bed features are tabulated below. In general the dimensions of the gravel paths and box hedge cuts are difficult to define precisely due to bioturbation (disturbance by roots, earthworms and small mammals). The dimensions of 'hard features' including the curbs and central pedestals can be measured more reliably. Not surprisingly, they seem to have been laid out with some precision in outline, although there are significant irregularities, most obvious in the details of the guilloche design.
- 6.3.7 Examination of the detailed survey drawings indicates that the square pedestals were set up at an early stage of setting out the design, possibly to serve as reference points. The alignments of all three beds is identical, but the lengths of the two side beds are slightly different at 31.02 m (101 ft, 9 in) in the South Bed and 30.69 m (100 ft, 8 inches). It seems likely that both side beds were intended to be 100 ft long.
- 6.3.8 Both beds widen very slightly (by about 80-100 mm) towards the east. The widening is so slight that it is probably the result of slight surveying errors in transmitting the design from drawing board to the ground, although it is not impossible that the widening of the beds is a deliberate design feature, perhaps intended to reduce the

perspective effect on the gardens as seen from the house. Other slight flaws suggest that a certain degree of tolerance was accepted or went unnoticed in laying out the design.

- 6.3.9 The chamfered corners of the side beds, the oval ends of the central boss, and the circles forming the ‘guilloche’ and circular flower beds, appear to have been set out using a standard diameter measurement of 12 feet.
- 6.3.10 Twelve foot diameter circles also appear to be a recurring feature in the central bed and may be a clue to the geometry of the original garden design. The distance between the outer curb edges of the north and south side beds averages 60.13 m (197 ft, 3 in), varying by 0.20 m between the east and west ends. The measurement from the centre-line of the central bed to the centre-line of the south bed is 33.41 m (109 ft, 6 in). The distance from the centre-line of the central bed to the outer curb of the south bed is 18.75 m (61 ft 6 in). None of these measurements are obvious round numbers, but given the margins of error seen elsewhere in setting out, all are close enough to multiples of 12 feet to suggest that the design may have been set out using a 12 foot square grid or similar.

*Table 1: North and south side bed dimensions*

<b>Feature</b>	<b>Width</b>	<b>Length</b>	<b>Typical surviving depth</b>
South bed overall dimensions (to outer curb edges)	6.47 m (21 ft, 3 in) at the west end; narrowing to 6.40 m at the east end.  The intended measurement was probably 21 ft for both beds (the width of the central pedestal, 3 ft, plus 4 ft, 6 in feet from the plinth face to the outer curb of the central boss, and 3 ft 6 in from there to the outer edge of the outer curb; repeated on either side of the central axis).	31.02 m (101 ft, 9 in), measured to the outer edge of the limestone curb. The intended measurement may have been 100 ft overall, or 103 ft (the central pedestal length (3 ft) plus 50 feet at each end, .	N/A
South bed construction cut	7.20 m (estimate)	31.2 m (estimate)	Full depth not established
North bed overall dimensions (to outer curb edges)	6.32 m at the west end, narrowing to 6.30 m at the east end. (Intended measurement 21 ft).	30.69 m (100 ft, 8 in). Intended dimensions as above.	N/A
North bed construction cut	6.50 m (estimate)	31.0 m (estimate)	0.36 m

Feature	Width	Length	Typical surviving depth
Central boss South Bed	3.37 m. (c 11 ft - The intended width might have been 12 ft - The 3 ft square plinth, plus 4 ft, 6 in on either side, measured to the outer edge of the curb)	5.53 m (Intended length 18 ft - 3 ft square plinth, plus 7 ft, 6 in on either end, measured to the outer edge of the curb)	c. 450 mm
Central boss North Bed	3.39 m. (c 11 ft - The intended width might have been 12 ft - The 3 ft square plinth, plus 4 ft, 6 in on either side, measured to the outer edge of the curb)	5.64 m (Intended length 18 ft - 3 ft square plinth, plus 7 ft, 6 in on either end, measured to the outer edge of the curb)	c. 450 mm
Chamfered corners of the north and south side beds.	Diameter 1.83 m (6 ft), centred on the corner of a rectangle framing the overall bed outline, measured to the inner edge of the curb.  Width between the chamfers at each end of the beds is 9 ft	N/A	N/A
Curbstones	Blocks are c 100 mm (c 4 in) at top and c 180 mm (c 7 in) at base; (The top is worked to a smooth and regular finish. The base, below turf level, is only roughly finished).	Variable (c 500 mm to c 1500 mm)	Limestone blocks vary from c 400 - 500 mm (c 16-20 in) deep. The curb levels are modified by the addition of one course of bricks beneath the outer curb and 2 courses beneath the central boss curb.
Typical brick dimensions	110 mm	230 mm	80 mm
Gravel paths (main guilloche pattern)	c 400 mm (c 16 in)	N/A	c 70 mm
Box hedge planting beds	c 100 mm (c 4 in)	N/A	c 70 mm
Circular flowerbeds within the guilloche pattern	Actual diameter varies considerably and is not clearly defined - Intended measurement seems to have been 12 ft in diameter	N/A	c 200 - 300 mm

#### 6.4 The sequence of construction

6.4.1 The following sequence of construction is deduced from the excavated evidence:

1. The ground was first roughly prepared, landscaped and levelled, using an imported sub-base material comprising a uniform, finely sifted, orange brown silty sand. Bedrock was only encountered in one location during the present excavation, so the quantity of imported material is unclear at this stage.
2. The bed outlines were then set out and further defined and levelled by cutting rough outlines into the landscaped sub-base. These construction cuts were clearly visible in section behind the curbstones. The cut for the north bed was broader (31.0 x 7.2 m, full depth not seen) than the south bed (31.0 x 7.5 x 0.36 m), which suggests that the initial setting out of the bed outlines may have been carried out quite roughly, allowing some margin for error.
3. A series of three drainage channels was then cut in each side bed, comprising two side drains and a central drain. The drains fell slightly from west to east and contained ceramic pipes laid in the base of each cut, which were then back-filled with carefully sifted coarse-grained material, noticeably looser than the surrounding sub-base. The alignment of the drains is only roughly consistent with the alignment of the beds, confirming the stratigraphic evidence that they were installed before the bed outline or curbs were in place.
4. The stratigraphic and detailed survey evidence both indicate that the square central pedestals were set up early in the construction process, possibly to act as reference markers for laying out the overall garden design, as well as the detailed design of the side beds themselves. In each side bed the plinth was built in brick, the footings set in a shallow cut in the prepared sub-base (*c* 0.35 m deep). The plinths were exactly 3 feet square, the surface of the brick rendered with mortar. The central drain was linked to a ceramic drainpipe set vertically in the core of the plinth (designed to drain the urn placed on top).
5. Thereafter the outline of each bed was set out accurately, to guide placement of the curbs and subsequent refinement of the landscaping work. The setting out was clearly undertaken with considerable precision at this stage, although slight errors and discrepancies are present. It is also not always clear where original measurements were been taken from, so it is difficult to be sure of the precise intended measurements (See Table 1).
6. Having accurately marked the bed outlines (including the chamfered corners) the outer edge curbstones and those surrounding the central boss, were laid in shallow cuts made in the sub-base. The outer curb was laid on a single course brick foundation. The curb around the central oval boss was laid on two brick courses, the additional course raising the height of the central boss slightly above the level of the outer curb.
7. Fine adjustments to the landscaping were then carried out by in-filling behind the curbstones.

8. The level of the central oval boss was built up by in-filling the area inside the curbstones. At the base of the fill sequence was a drainage layer of fairly loose, coarse-grained soil. Above that was a subsoil layer, comprising a finely sifted, silty sand growing medium, above which was the turf. The oval area surrounding the central pedestal appears in historic photographs to be covered with lawn and may have been so in the original design. There is no archaeological evidence to suggest otherwise.

9. At this stage the guide layout for the guilloche design was marked out on the ground, being repeated at each end of the bed (rather than a mirror image). The total length of the design (repeated in each half) was *c* 50 feet, measured from the central plinth. The guide layout may have consisted of no more than a series of simple intersecting circles, marked out along the centreline of the bed, probably using a 6 foot radius measure. From the central plinth the surveyor would have measured 3 or 4 feet along the bed centre line and from that point inscribed a 6 foot diameter semi-circle, defining the outer edge of the central oval boss (the curbstones for this were already in place when the guilloche design was set out). He then would have set out a series of three intersecting circles, each 12 feet in diameter, finding the centre points by measuring along the bed centreline in 6 foot increments. The distance from the edge of the last circle to the end of the bed would also have been *c* 4 feet (making *c* 50 feet in total).

10. Shallow bowl-shaped cuts were made within each 12 foot diameter circle, for flowerbeds. The triangular areas between the circles also appear (from limited sample excavation) to have been dug out, suggesting that they were intended to serve as flowerbeds. The very few photographic views of the side beds show no sign of planting in these areas, although they are obscured by the box hedges in the best two views (Hughes 1997, EP19, EP20, dated between 1910 and 1920). Small flowerbeds may have been included as part of the original design, and lawned over in later modifications. Further excavation should clarify this point.

11. The entire side bed (excluding the central oval boss) was then covered by a continuous layer of finely sifted, dark brown, sandy silt growing medium, up to the level required for the planting beds in the guilloche circles, and the triangular beds between the circles. The original level is not certain, but is probably indicated by the moss line recorded on the curbstones, at a depth of *c* 200 mm. Pegs were presumably used to mark the guide circles during the in-filling.

12. The gardeners would then have levelled and smoothed the surface of the growing medium in preparation for marking out the details of the guilloche design. They seem initially to have used the 12 foot diameter guide circles to set out the pattern. However there are considerable irregularities in the execution of the guilloche design which suggest that the details of the gravel banding and box planting beds were thereafter drawn or dug in inexpertly or 'by eye'. This represents a departure from Nesfields preferred method and may indicate that the work was not

carried out under his direct supervision. Nesfield's instructions, as annotated on his plan for plantings at Stoke Edith [HRO/E12/111/727], required that that : "When a surface is perfectly smooth upon which to transfer a Design, and the given forms are carefully constructed and drawn out, the outlines must be secured by short pegs about 6 inches long & 7 or 8 inches apart, then a sharp edge must be cut perpendicularly against which to apply the Box as x thus" : [thumbnail sketch accompanies Nesfield's note] (Calf, 1998).

13. Shallow trenches were then marked out and cut to form the guilloche pattern, possibly to a standard 24 inch width, allowing 4 inches for the box hedge planting beds and 16 inches for the gravel paths (see para 14 below). "The inner edges of these trenches would have been sharply and perpendicularly cut and the tiny box plantings set against them (Calf, 1998)". Traces of the box hedge planting beds were generally discernable in section, as more root disturbed than the surrounding soils. The roots also created diffuse, irregular edges so that the dimensions are not clear-cut. As recorded, the root disturbed areas were visible to a depth of *c* 200mm, although the roots no doubt penetrated below the level of the original cut.

14. The guilloche pattern, the outer gravel paths, and the path surrounding the central oval boss, were then laid in between the lines of box and the curb, filling the shallow cuts made in the growing medium, using coloured gravel, laid between the lines of box hedge. On investigation, the edges of the paths proved difficult to define as a result of root action, spreading of the gravel and other post-depositional disturbance. There is considerable variation in the width of the bands as recorded,, but the typical width appears to be *c* 400 mm (*c* 16 inches). Further work is required to identify the significance of the different coloured fragments found in the remnants of the gravel paths. Only the base of the paths survives, consisting of a mixed soil layer containing residual gravel. The inclusions in the perimeter path included predominantly coal, slate and white quartz fragments. The path surrounding the central boss comprised predominantly coal and red brick fragments with occasional slate and quartz - It is likely that the coal represents a base layer and other inclusions represent remnants of the coloured gravel used in the design. If this is correct the colouring would have been predominantly red (crushed brick/ tile), white (quartz) and possibly blue (slate).

15. Turf was laid in the lawned areas, including the central boss and possibly the triangular areas around the edge of the guilloche design (see comments in line 10 above).

16. Finally the planting was carried out. This is the most ephemeral aspect of the design and has left no clear archaeological trace. Occasional flowerpot fragments were found during sample excavation, but in no case were these clearly *in situ*.



## 7 DISCUSSION AND INTERPRETATION

### 7.1 Reliability of field investigation

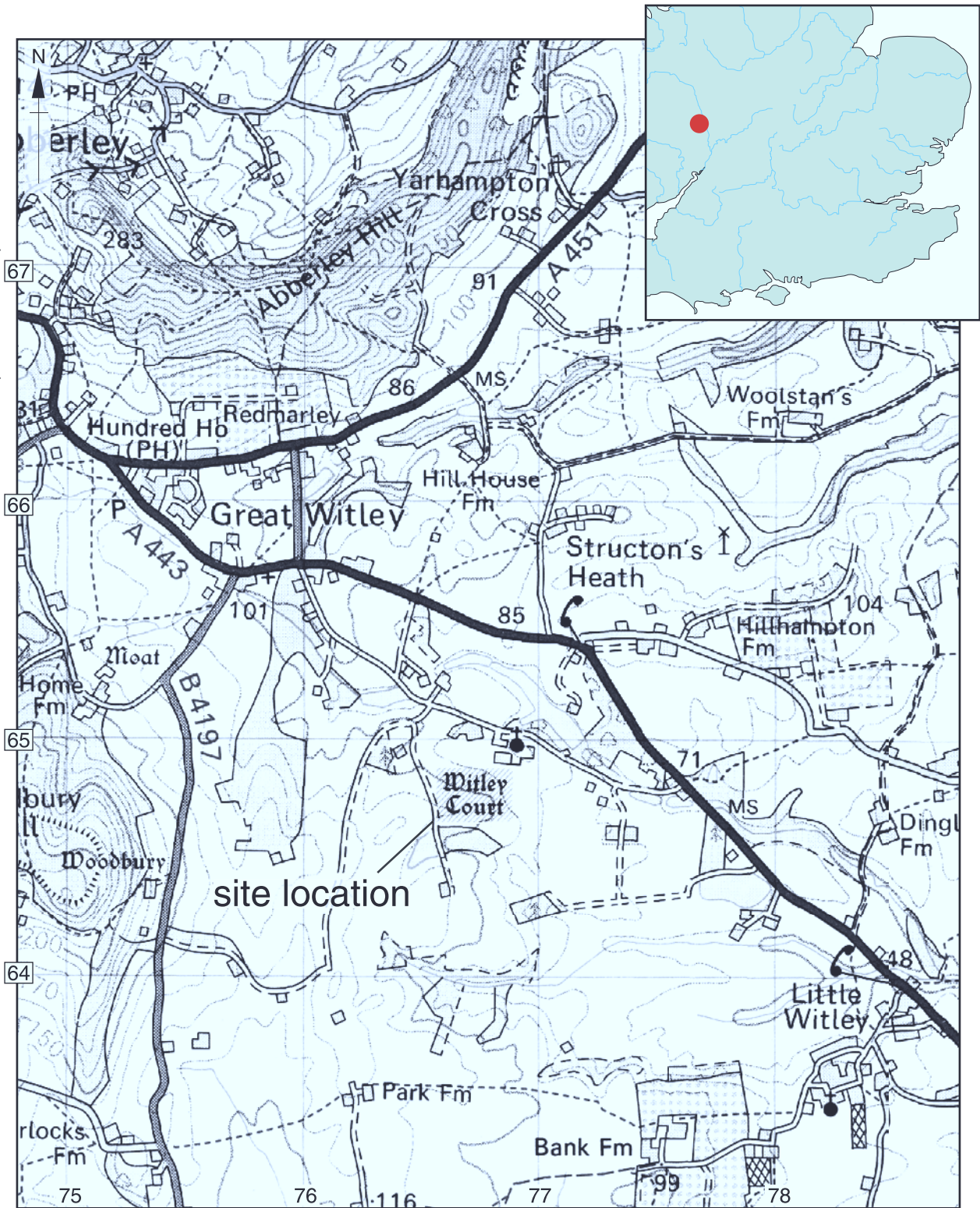
7.1.1 Survival of the bases of paths and planting beds within the parterre gardens was unexpectedly good. The distinction between the imported landscaping soil into which the garden features were cut, and the fills of the garden features was strongly marked. However distinguishing the planting bed cuts in plan and section within the side beds proved difficult due to the lack of colour contrast. Feature edges were typically diffuse, probably as a result of root action, animal and earthworm burrowing. In some limited areas more substantial root action has entirely obliterated traces of the beds. High definition rectified photography alone proved inadequate as a record for this reason. Nevertheless, the fieldwork has thus far resulted in an accurate and detailed record of surviving garden features/deposits in the north and south side beds, through a combination of rectified photography, hand-drawn plans and sample sections. Weathering improved the visibility of archaeological features in the central bed to some extent, as remnants of the coloured gravel used in the paths was washed by rainwater. .

### 7.2 Overall interpretation: Summary of results

- 7.2.1 The detailed recording of the north and south side-beds has demonstrated conclusively that the designs were intended to be identical. The minor differences observed, in dimensions and pattern, can be attributed to inaccuracies in transferring the design from the drawing board to the ground.
- 7.2.2 Topsoil stripping in the western part of the central bed has demonstrated a similar level of archaeological preservation to that seen in the side beds. Initial cleaning and rectified photographic coverage has been obtained of the stripped area, following the initial strip and after several months of weathering. This has not clearly defined the planting beds and paths, although enough of the design can be made out to give confidence that the plan is recoverable using sample excavation methods similar to those applied to the side beds.

**APPENDIX 2 BIBLIOGRAPHY AND REFERENCES**

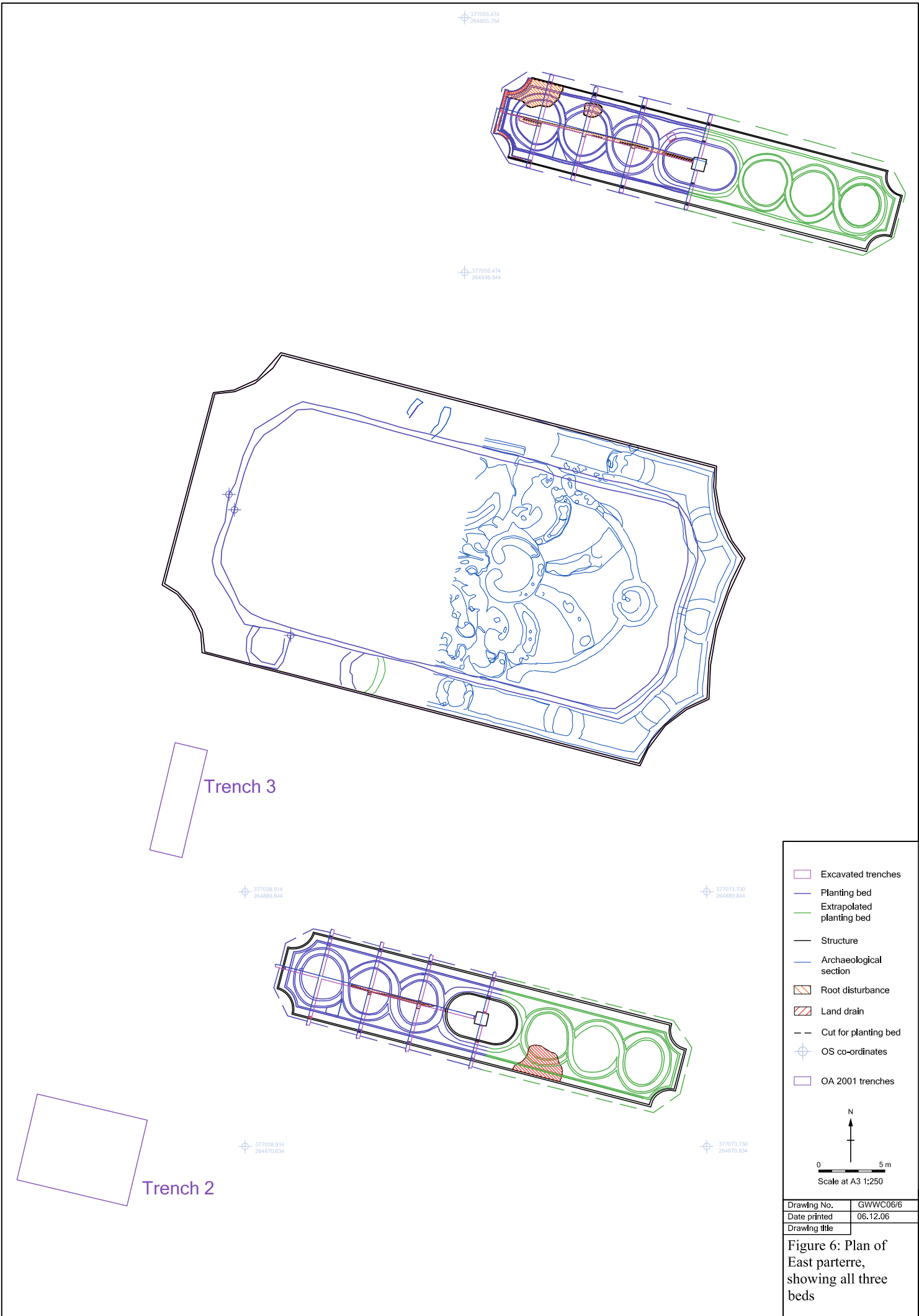
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Scale 1:25,000

Figure 1: Site location.



Trench 3

Trench 2

	Excavated trenches
	Planting bed
	Extrapolated planting bed
	Structure
	Archaeological section
	Root disturbance
	Land drain
	Cut for planting bed
	OS co-ordinates
	OA 2001 trenches

N  
0 5 m  
Scale at A3 1:250

Drawing No.	GWWC06/6
Date printed	06.12.06
Drawing title	

Figure 6: Plan of East parterre, showing all three beds

CHECKED BY:

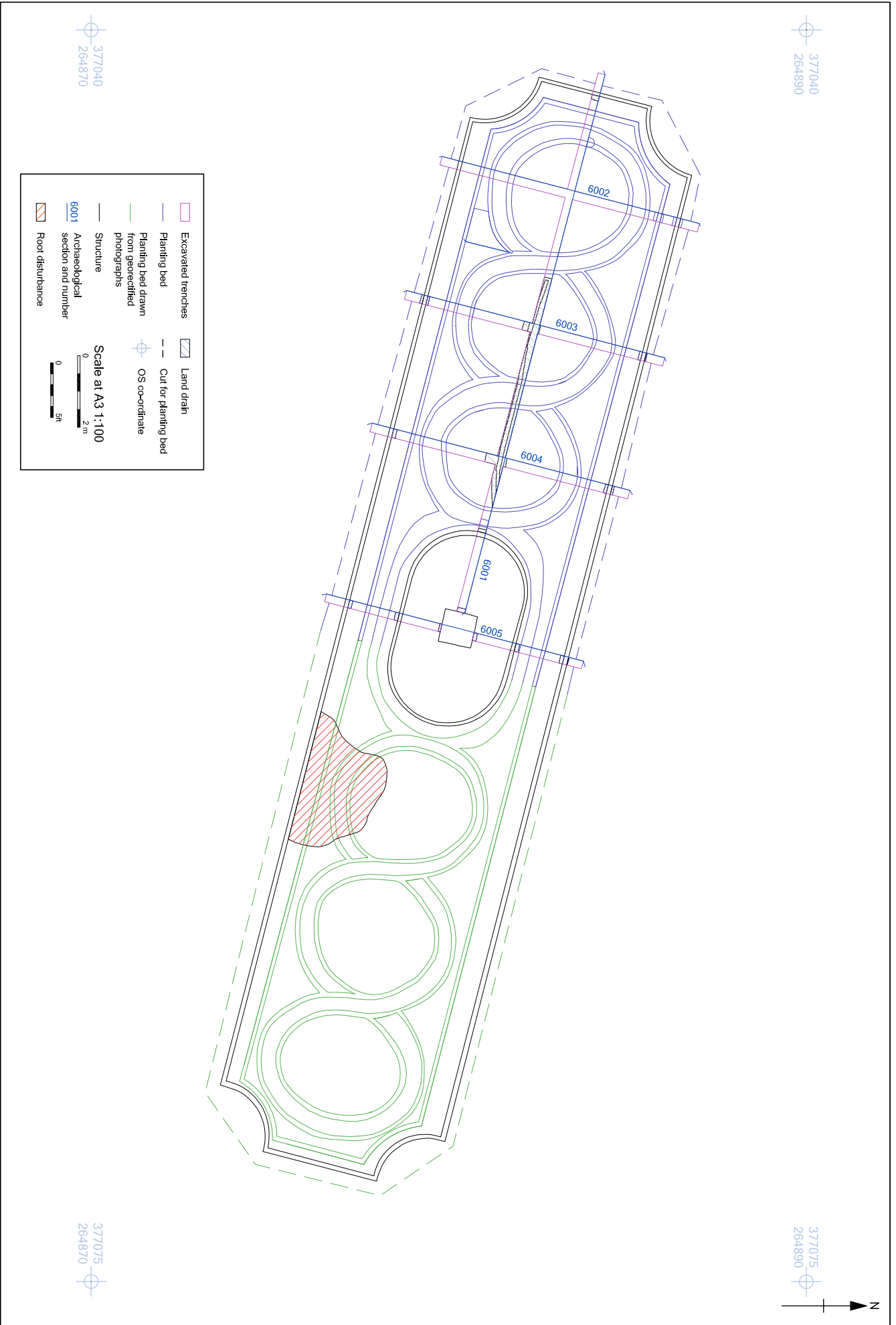
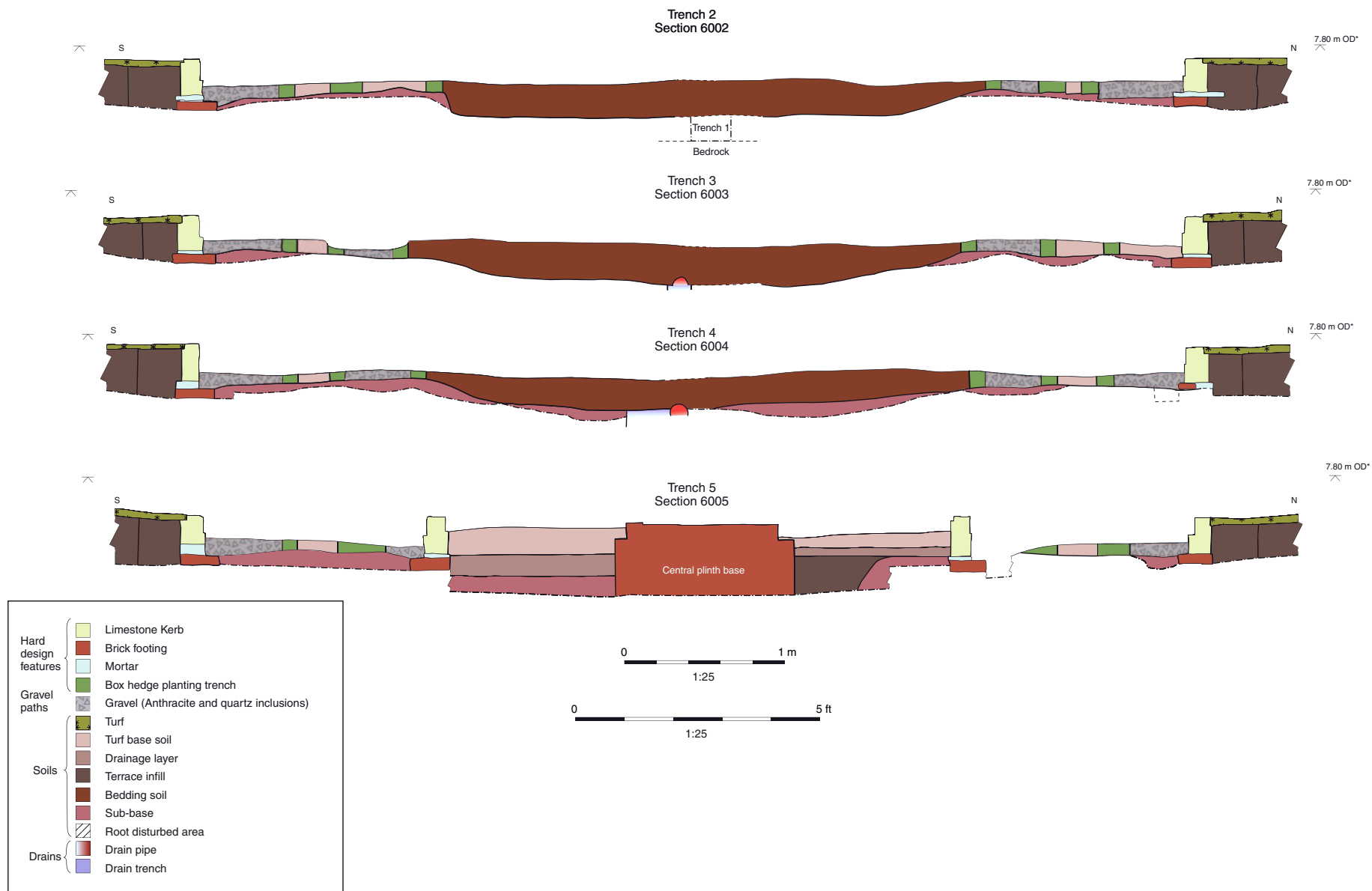
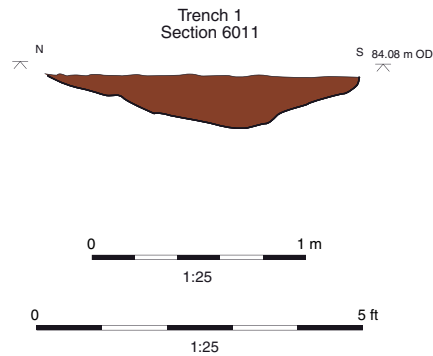
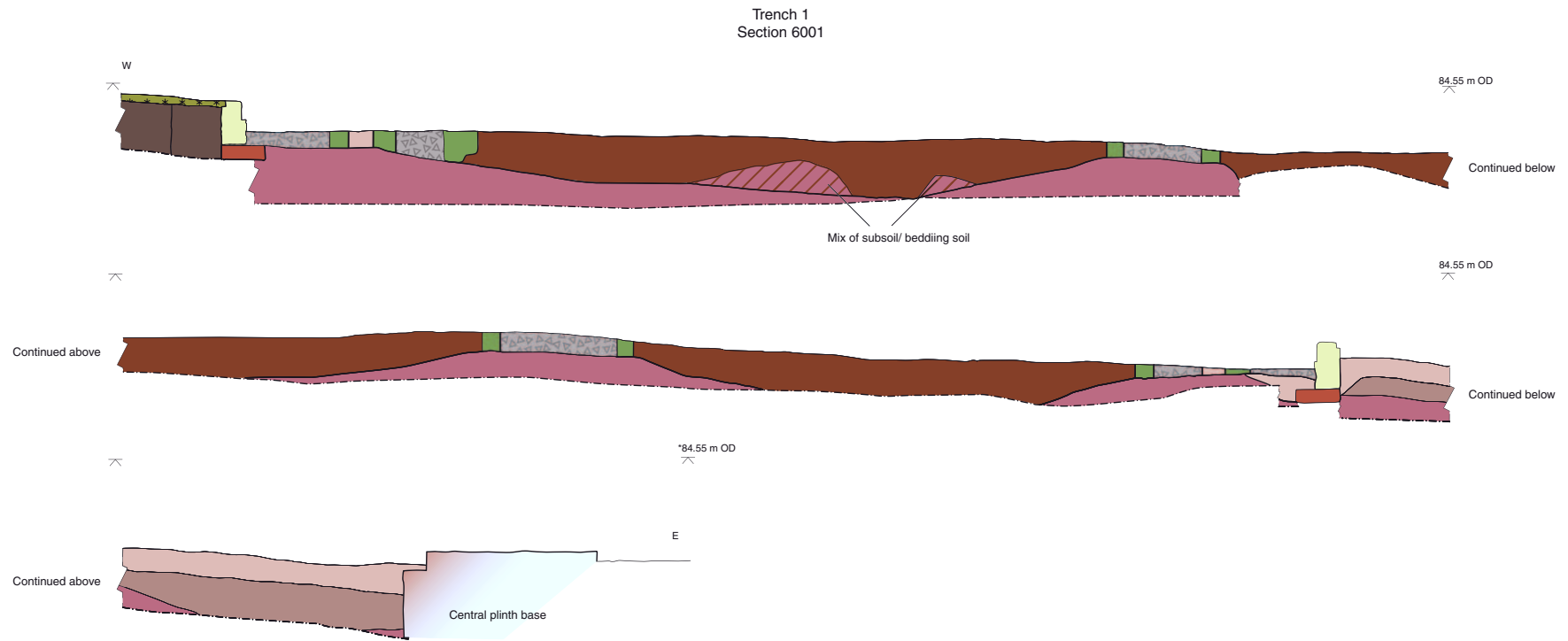


Figure 3: Excavation plan of the south side bed showing the plan of the beds as recorded and locations of recorded sections



\*Levels: Metres above Ordnance Datum

Figure 4: Recorded transverse sections through the south side bed, illustrating depth and methods of construction (sections 6002 - 6005)



Hard design features		Limestone Kerb
		Brick footing
		Mortar
Gravel paths		Box hedge planting trench
		Gravel (Anthracite and quartz inclusions)
Soils		Turf
		Turf base soil
		Drainage layer
		Terrace infill
		Bedding soil
		Sub-base
Drains		Root disturbed area
		Drain pipe
		Drain trench

\*Levels: Metres above Ordnance Datum

Figure 5: Recorded longitudinal section through the south side bed, illustrating depth and methods of construction (section 6001)

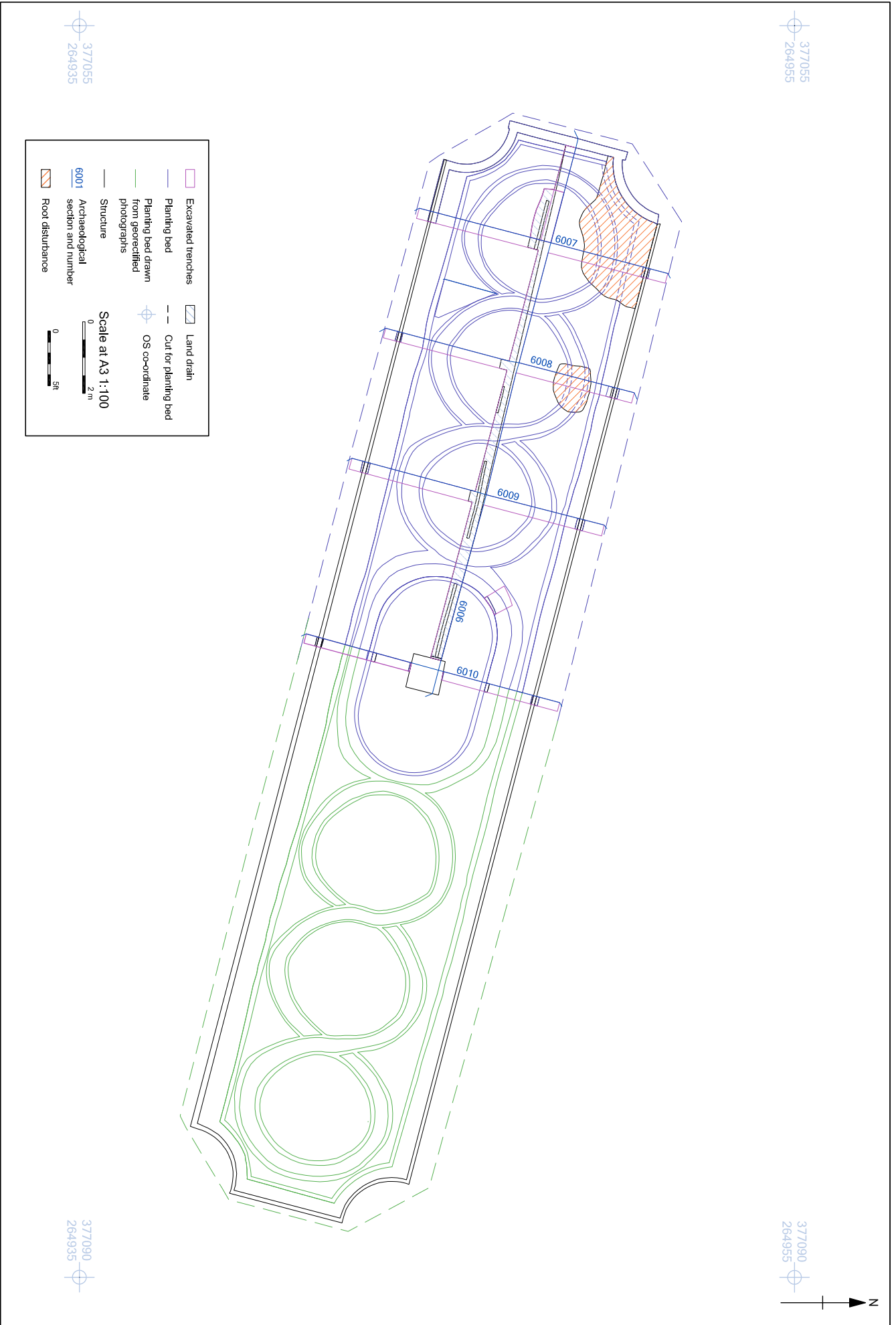
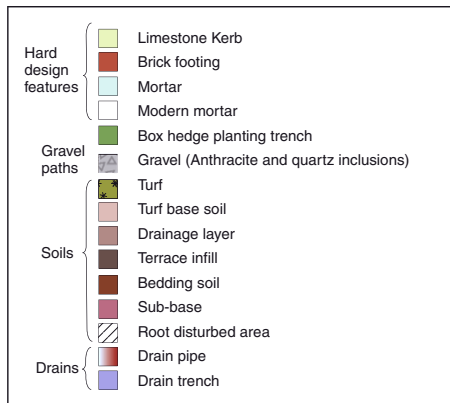
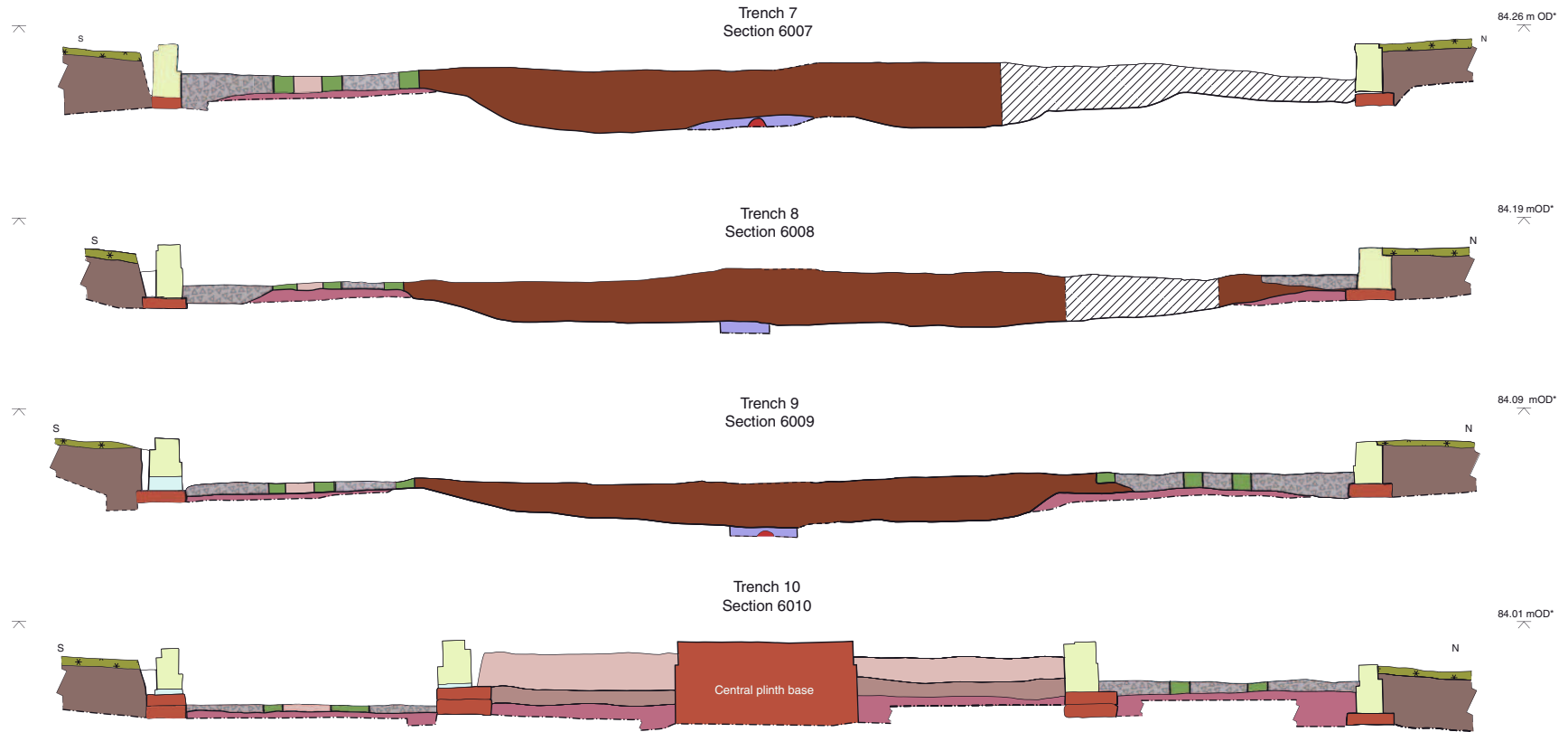


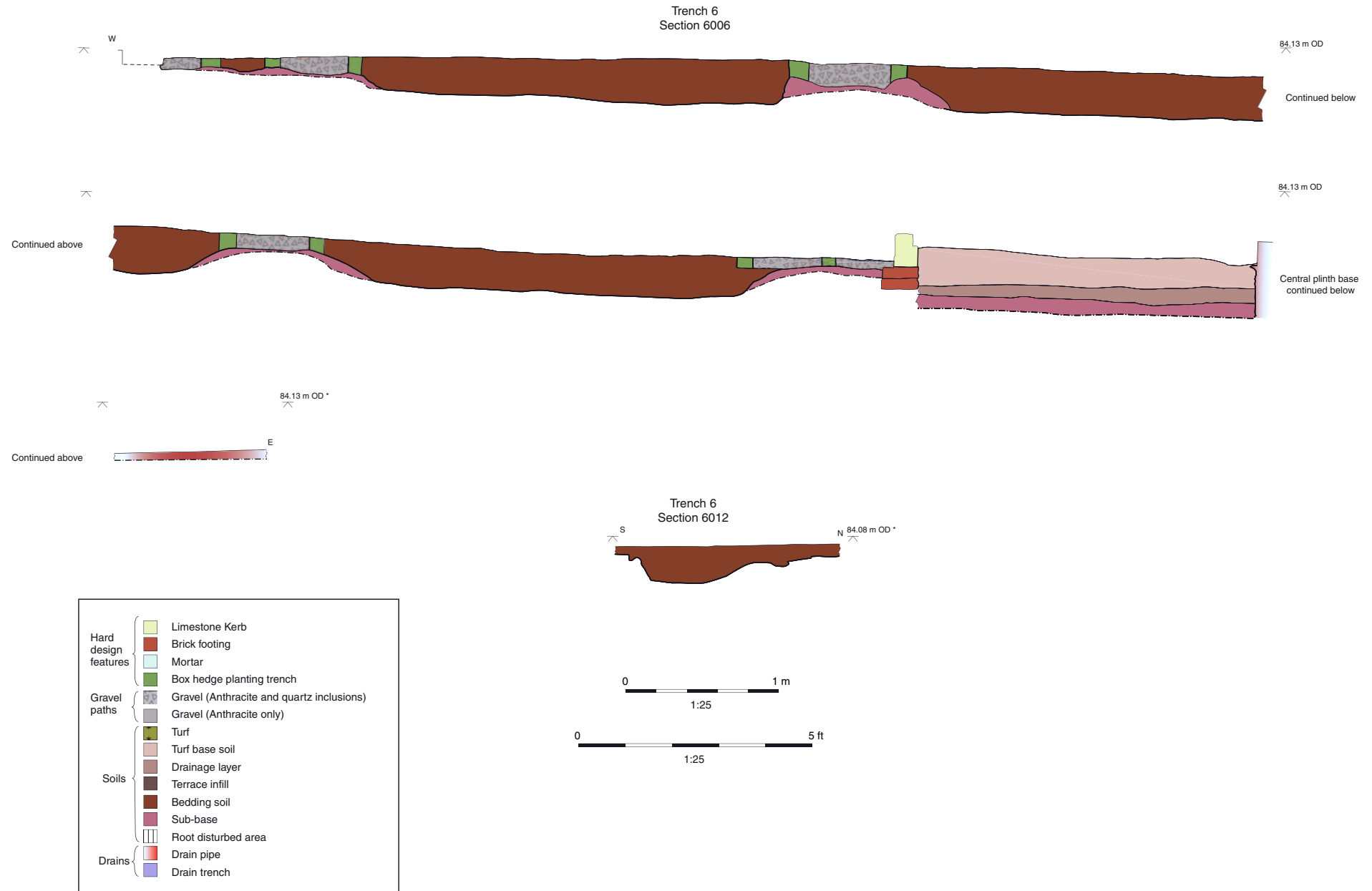
Figure 6: Excavation plan of the north side bed showing the plan of the beds as recorded and locations of recorded sections





\*Levels: Metres above Ordnance Datum

Figure 7: Recorded transverse sections through the north side bed illustrating depth and methods of construction (sections 6007 - 6010)



\*Levels: Metres above Ordnance Datum

Figure 8: Recorded longitudinal sections through the north side bed illustrating depth and methods of construction (section 6006)

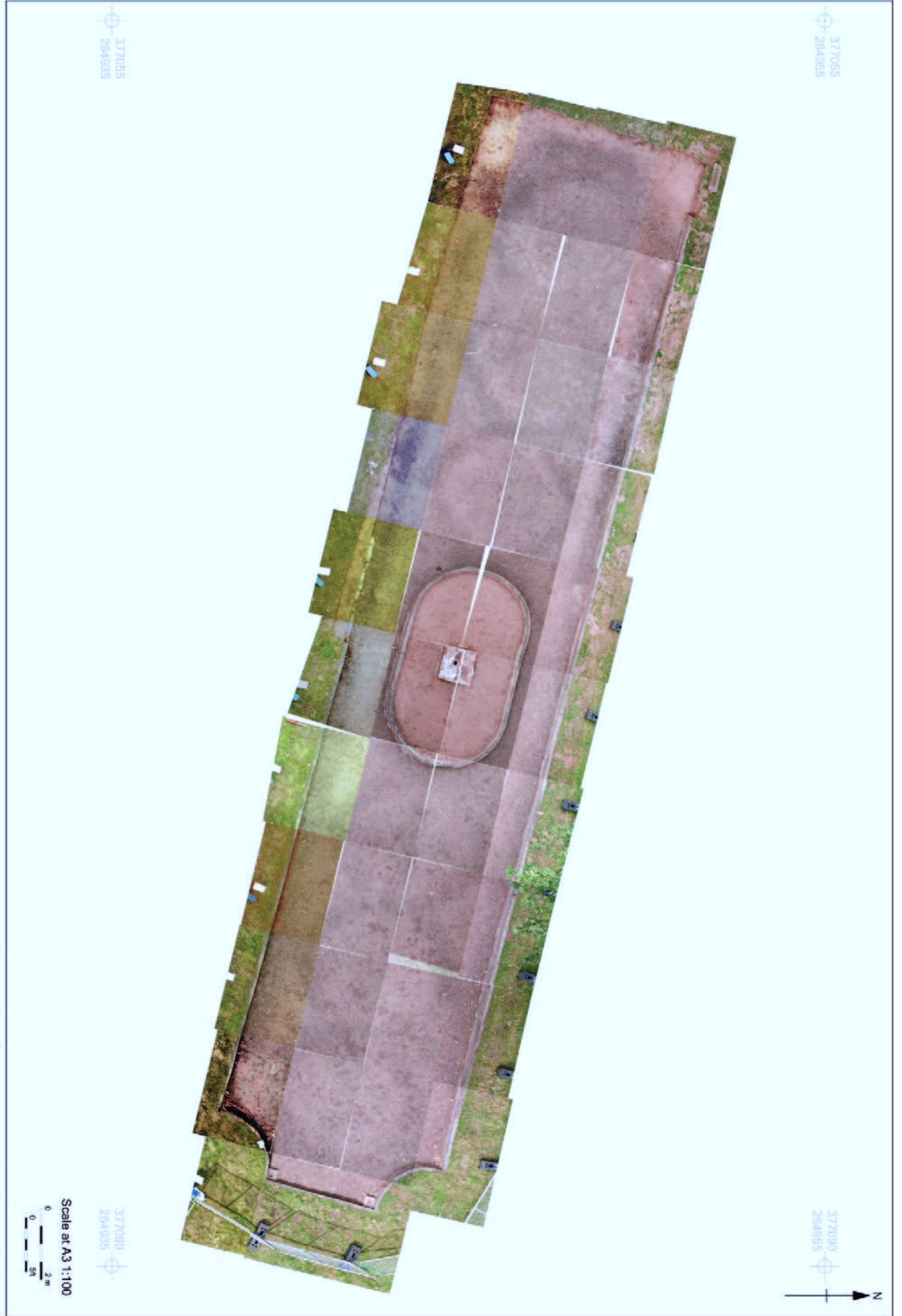


Figure 9: Rectified photographic plan of the north side bed



377040  
264890

377040  
264870

377075  
264890

377075  
264870



Scale at A3 1:100  
0 2m  
5m

Figure 10: Rectified photographic plan of the south side bed



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